



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Flint Water Pollution Control Facility, Flint, Michigan

FROM: Tess Russell, Environmental Engineer
AECAB (MN/OH)

THRU: Brian Dickens, Section Supervisor
AECAB (MN/OH)

TO: File

BASIC INFORMATION

Facility Name: Flint Water Pollution Control Facility

Facility Location: G-4652 Beecher Road, Flint, MI 48532

Date of Inspection: 4/18/2022

EPA Inspector(s):

1. Tess Russell, Environmental Engineer
2. Natalie Schulz, Environmental Engineer

Other Attendees:

1. Jeanette Best, Flint Water Pollution Control Manager
2. John Florshinger, Flint Water Pollution Control Main Supervisor
3. Chad Antle, CEO of Bioworks Energy
4. Dan McGeen, Michigan Department of Environment, Great Lakes, and Energy (EGLE) inspector

Contact Email Address: jbest@cityofflint.com

Purpose of Inspection: To evaluate for VOC emissions from the anaerobic digester operations; To determine Clean Air Act (CAA) compliance with Michigan state implementation plan and NSPS Part 60, Subpart JJJJ

Facility Type: Wastewater treatment facility with anaerobic digester operations

Regulations Central to Inspection: NSPS Part 60, Subpart JJJJ; Michigan SIP – Exemption 282 and 285

Arrival Time: 2:00 PM

Departure Time: 4:40 PM

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☐ Provided Small Business Resource Information Sheet
- ☒ Small Business Resource Information Sheet not provided. Reason: Not a small business.
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Jeannette Best, John Florshinger, or Chad Antle unless otherwise noted.

Process Description:

City of Flint Water Pollution Control Facility is a municipal wastewater treatment facility. EPA's inspection focused on two mesophilic anaerobic digesters (capacity: 60,000 gallons each); a candlestick flare (12-inch diameter; 30,000 cubic feet per hour); and 3 engines (two established and one in the process of coming online) which combust biogas from the anaerobic digestion process.

Incoming biosolids and substrates arrive by truck and are added to the East Storage Tank (East Tank) through a submerged, hose connection. The facility also has de-packaging machinery which opens packaged foods that are pumped into the East Tank. Residence time in the East Tank is approximately 18 days. Sludge is transferred to the anaerobic digesters where residence time is approximately 12-15 days. Digested sludge is transferred to the Blue Tank before entering the dewatering process, and dried digestate is stored on-site until it is hauled to a landfill.

Two abandoned concrete tanks at the facility are in the process of being repurposed into new storage tanks to add capacity for digested biosolids prior to the dewatering. The tanks will be used similarly to the Blue Tank.

Staff Interview:

The storage tanks are not identified as subject to federal or state regulations and currently are exempt from permitting per Michigan SIP Exemption 285. In accordance with the exemption, the storage tanks are wastewater treatment equipment not primarily designed to treat volatile

organic compounds. The East Tank has a fixed, geodesic dome cover. The East Tank has pressure relief valves (PRVs) that are safety devices and are not monitored for when they open. According to facility representatives, it is rare to see the PRVs open but it does happen. There is a Peacemaker scrubber on the East Tank which controls odors primarily from hydrogen sulfide (H₂S) and mercaptans, but its operation or maintenance is not required by permit or regulation. The Blue Tank has PRVs similar to the East Tank and a dome to collect extra gas to be routed to the flare.

The anaerobic digesters are currently not permitted. EPA is following up with the State on this matter. The facility indicated it is not required to maintain specific residence times or temperatures in the anaerobic digesters because the facility does not produce a Class A or B biosolids – biosolids to be re-used in land applications.

According to the facility representatives, the flare is operating most of the time. The flare is currently not permitted under Michigan SIP Exemption 282(g). The facility believes it is not required by regulation to take H₂S measurements of the waste gas combusted in the flare or engines. Chad Antle mentioned the facility takes measurements about annually, but this is mostly to ensure proper conditions for running the engine safely. The facility indicated it would increase H₂S testing if something appeared wrong with the anaerobic digesters. According to Chad, the engines require H₂S readings of less than 200 ppm; the facility's goal is approximately 20-50 ppm. An H₂S concentration of 200 ppm is the maximum limit for the 30,000 ft³/hr flare to remain under the 1 lb/hr SO₂ limit required by Exemption 282(g). EPA requested H₂S testing records for review and is following up with the State regarding frequency of required tests.

Part 60, Subpart JJJJ requires the engines to undergo initial performance testing for CO, NO_x, and VOC emissions. The original engines passed these tests in 2016 and 2018, respectively. The third engine will be online soon, and will be scheduled for an initial performance test within the first year of coming online as required by the regulation. Subpart JJJJ does not require subsequent performance testing on these engines unless they are rebuilt or modified, which the initial engines have not been.

According to the facility and Dan McGeen, there have been zero odor complaints in 2022 as of the time of the inspection. The last odor complaint was in October 2021.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:

EPA conducted an odor survey prior to arriving at the facility by driving around the facility's perimeter on accessible streets. No odors were detected during the survey.

The facility had incinerators that were in the past subject to federal regulation. EPA observed that the incinerator feeder conveyor belts were deconstructed, indicating that these incinerator-specific federal regulations no longer apply to the facility.

EPA observed that the North anaerobic digester has a fixed roof and the South anaerobic digester has an external floating roof. According to facility representatives, the North digester has not had similar pressure and overflow problems as were identified in the past after the flow meter was replaced with a thermal mass meter. Odors were detected around the South digester by EPA inspectors, and EPA inspectors observed bubbling around the water seal of the digester's floating roof. EPA inspectors observed no VOC emissions from the tanks with the optical gas imaging camera.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

CLOSING CONFERENCE

☒ Provided U.S. EPA point of contact to the facility

Requested documents:

- The last digestate testing/composition report
- The H₂S test results mentioned during the inspection being performed for the State, as well as previous 4 consecutive testing results
- Statement on whether any federal regulations will apply to the two new tanks coming online in Summer/Fall 2022
- Specify what the media is in the East Tank Scrubber

DIGITAL SIGNATURES

Report Author: Russell, Tess Digitally signed by Russell, Tess
Date: 2022.06.07 09:50:49
-05'00'

Section Supervisor: Brian Dickens Digitally signed by Brian Dickens
Date: 2022.06.07 10:29:44 -05'00'

Facility Name: Flint Water Pollution Control Facility
Facility Location: G-4652 Beecher Road, Flint, MI 48532
Date of Inspection: April 18, 2022

APPENDICES AND ATTACHMENTS

1. Appendix A: FLIR Video Log

Facility Name: Flint Water Pollution Control Facility
Facility Location: G-4652 Beecher Road, Flint, MI 48532
Date of Inspection: April 18, 2022

APPENDIX A: DIGITAL IMAGE LOG

1. Inspector Name: Tess Russell	2. Archival Record Location: <i>One Drive and ERC</i>
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Image Number	File Name	Date and Time (incl. Time zone and DST)	Description of Image
1	MOV_2674.mp4	Monday, April 18, 2022 3:45:48 PM	Perspective with East Tank on left and North Digester on right.
2	MOV_2675.mp4	Monday, April 18, 2022 4:20:12 PM	South Digester rim, view from SE corner, looking west